END-RESULTS FOLLOWING OPERATION FOR BENIGN DISEASES OF THE STOMACH AND DUODENUM.*

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Empiricism, or the reliance on direct experience and observation rather than on theory, must be condemned, as a rule, in the scientific surgery of to-day. There should undoubtedly be a reason for every step taken in surgery; there should be a theory back of every application of practical means used to afford relief from any pathological condition found in the human body. The practical mind, however, is ever too prone to seek results rather than to explain how or why such results are obtained. Practical experience must influence us to work more or less empirically, although it must be admitted that there is always a tendency to adopt a theory which is more or less in keeping with the results obtained—a theory that may be laid aside in a day; a month, a year. This tendency toward empiricism has been especially marked in the operative treatment of some of the benign diseases of the stomach and duodenum. Practical results are obtained, but why they are obtained in some conditions must be left for the future to definitely decide. Hence it is that a study of end-results following operative interference in these diseases will give a better idea of the condition in which a stomach operation is indicated than would a study of the theoretical etiology of the

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conditions present, or a study of the theory underlying the results obtained.

Stomach surgery is in its infancy. It has grown old enough, however, and has shown sufficient accomplishments, to make most investigators agree that certain pathological conditions to be found in that organ and the duodenum must be overcome by the surgeon rather than by the internist. The immediate results speak volumes; the end-results are far superior to any that can be obtained by other than operative means.

The principal benign diseases of the stomach and duodenum which are found in the realm of surgery to-day are ulcer, with its various complications; gastrectasis, whether due to pylorospasm, gastric myasthenia or pyloric stenosis; and stenosis of the pylorus, either with or without dilatation.

End-results following operation for gastric ulcer do not always justify the picture so graphically portrayed by Kocher, but he undoubtedly is correct in the vast majority of cases when he says that "not only can the numerous dangers of ulcerating affections of the stomach, such as hemorrhage, perforation, transition into cancer, be prevented, but the disease and its results may be so rapidly and certainly cured that the medical treatment of obscure cases must be put in the background. The pain in the stomach disappears immediately after the operation. This is the invariable rule. The patient does not require to pay any further attention to the nature of his food. The vomiting disappears, the bowels become regular, there is progressive improvement in the process of digestion."

In gastric dilatation, gastric myasthenia, and ptosis of the stomach probably the most that surgery can do is to so alter the mechanism of the stomach and intestine that medical measures will become effective.

When there is pyloric obstruction, no matter what the cause, there is a definite procedure indicated,—namely, the establishment of a free and permanent communication between the stomach and intestine.

In these various diseases, practical experience has taught that the best results may be obtained by performing a gastro-enterostomy. The choice of operation varies with different operators. Personally, I prefer the posterior gastrojejunostomy, when it is practicable, the no-loop-clamp method with excision of a portion of the mucous membrane. This procedure practically eliminates the danger of the so-called "vicious circle" and the use of the clamps minimizes the danger of leakage and infection during the operation. The end-results are just as good when the suture method is used with no loop, instead of the clamps, but the primary danger is greater than in the former method. The no-loop operation is a great advance over the long-loop, not only because the immediate results are better, but also because there is much less or practically no danger of a vicious circle being established even subsequently, as not infrequently was the case even when a primary enteroenterostomy was performed.

Patient No. 2610, 1905, is a good example of this condition. Patient was a female, aged 40. She had been operated upon in 1900, the name of the operator not being ascertained, for ulcer of the stomach, a posterior gastrojejunostomy, long-loop, being performed with a Murphy button. For one year she was in good health with no stomach symptoms. During the year she gained 35 pounds. She then began vomiting intermittently, which continued with more or less regularity for three years. She was admitted to the German Hospital November 28, 1905, with persistent uncontrollable vomiting of stomach contents and bile. Operation, November 29, 1905. Ether anæsthesia. The gastrojejunostomy opening was patulous. The pylorus was partially occluded by an old scar. An enteroenterostomy with suture was performed, and the pylorus was ligated with silk. She made an uninterrupted recovery. February 11, 1908, two years and three months after the operation, she is in fairly good health, much better than before the operation, although she still complains of some stomach trouble. The no-loop operation practically eliminates all such cases from the surgeon's notice.

The operation of election should always be performed

when possible; the best possible procedure under the conditions present must be adopted when the operation of election is not feasible. A poorer and much less satisfactory method, the anterior gastrojejunostomy, should not be excluded entirely from the surgeon's list of proeedures, as has been advoeated by one of the best-known operators in the country.

Patient No. 478, 1902, a male aged 40 years, furnishes a good example of what ean be aeeomplished even by this proeedure. He was transferred from the medical to the surgieal wards of the German Hospital with a history of long-standing stomaeh disease, with pylorie obstruetion. A mass in the pyloric region was easily palpable. Operation, March 10, 1902. Ether anæsthesia. Upon opening the abdomen a mass the size of a lemon was found oeeupying the site of the pylorus and eausing almost eomplete oeclusion. Extensive adhesions made it praetieally impossible to deliver the stomaeh suffieiently to allow of a posterior operation. An interior gastrojejunostomy was performed in the belief that the patient would be benefited by it. He made a rapid and uneventful reeovery, most of his symptoms disappearing immediately. Five years and eleven months after the operation he is in good health, being absolutely free from all gastrie symptoms. He has gained 36 pounds.

End-results will probably always be better when it is possible to perform the operation of eleetion or choice; but relief in all instanees must be afforded the patient, if it be at all possible, whether the method used be one of choice or one of necessity.

An analysis of the end-results in operation for benign diseases of the stomaeh and duodenum is of great interest to the medical profession of to-day, but it will be of greater value and interest to the operator of the future when the more improved methods of operation shall have had an opportunity to show their worth with increasing age. I have been able to traee 66 of the patients upon whom I have performed stomaeh operations for benign disease. Of this number 44 are free from all gastric symptoms, 9 are greatly improved,

5 are unimproved, and 8 have died. These figures give a percentage of cures of 66.6; of patients that were greatly improved, 80.3. From the operative view-point these patients were divided as follows:

Posterior gastrojejunostomy, long loop, suture: 7 cases traced, 6 of whom had no gastric symptoms 5 years 7 months, 5 years 3 months, 4 years 4 months, 2 years 1 month, and 1 year 4 months, respectively, after operation. One case died 4 years and 4 months after operation from unknown cause. Percentage of cures, 85.7.

Posterior gastrojejunostomy, long loop, suture, primary enteroenterostomy with Murphy button: 12 cases traced, 7 of whom had no gastric symptoms 4 years 5 months, 4 years 4 months, 3 years 4 months, 2 years 11 months, 2 years (moved to Ireland), 2 years 6 months, 3 years 2 months, respectively, after operation. One was improved 2 years 10 months after operation. Two were unimproved 3 years and 2 years 8 months respectively, after operation. Two cases died, both 2 months after operation. Percentage of cures was 58.3, of those improved, 66.6.

Posterior gastrojejunostomy, long loop, suture, secondary enteroenterostomy, Murphy button: 3 cases traced, 1 of whom had no gastric symptoms 4 years 6 months after operation. Two cases died, one 2 years and 2 months after operation, cause unknown; the other died 1 year after operation from obstruction of the bowel due to bands. Percentage of cures was 33.33.

Posterior gastrojejunostomy, long loop, suture, primary enteroenterostomy with secondary ligation of the pylorus: 1 case traced, no gastric symptoms 2 years 2 months after operation.

Posterior gastrojejunostomy, long loop, suture, secondary gastroduodenostomy and enteroenterostomy: 1 case traced, no gastric symptoms 1 year 6 months after operation.

Posterior gastrojejunostomy, no loop, suture: 25 cases traced, of whom 16 had no gastric symptoms 2 years 7 months, 2 years 4 months, 2 years, 2 years, 2 years, 1 year 11 months,

1 year 9 months, 1 year 8 months, 1 year 8 months, 1 year 7 months, 1 year 7 months, 1 year 7 months, 1 year 5 months, 1 year 4 months, 1 year 1 month, 1 year 1 month, respectively, after operation. Four cases were improved 1 year 7 months, 1 year 5 months, 1 year 3 months, 1 year 2 months, respectively, after operation. Three cases were unimproved 2 years 2 months, 1 year 6 months, 1 year 3 months, respectively, after operation. One case died 1 year after operation, cause of death unknown. Percentage of cures, 64; of improvements, 84.

Posterior gastrojejunostomy, no loop, clamps: 6 cases traced, of whom 5 had no gastric symptoms 1 year, 11 months, 11 months, 10 months, 6 months, respectively, after operation. One case died 7 months after operation, there having been no improvement in the gastric condition.

Anterior gastrojejunostomy, suture: one case traced, no gastric symptoms 5 years 11 months after operation.

Duodenorrhaphy, posterior gastrojejunostomy, long loop, suture, primary enteroenterostomy: 1 case traced, no gastric symptoms 3 years 7 months after operation.

Duodenorrhaphy, posterior gastrojejunostomy, no loop, clamps: 1 case traced, no symptoms 9 months after operation.

Gastrogastrostomy, posterior gastrojejunostomy, short loop, suture: 1 case traced, improved 2 years 3 months after operation.

Gastrogastrostomy, posterior gastrojejunostomy, no loop, clamps: 1 case traced, improved 10 months after operation.

Enteroenterostomy, ligation of pylorus: 1 case traced, improved 2 years 3 months after operation.

Partial gastrectomy, posterior gastrojejunostomy, no loop, clamps: 1 case traced, no symptoms 8 months after operation.

Pylorectomy, posterior gastrojejunostomy: 1 case traced, no symptoms 4 years 8 months after operation.

Pyloroplasty: 1 case traced, no symptoms 4 years 7 months after operation.

Pylorectomy, posterior gastrojejunostomy, long loop,

suture, primary enteroenterostomy: 1 case traced, died 5 months after operation from general anasarca.

Gastrorrhaphy, posterior gastrojejunostomy, long loop, suture, primary enteroenterostomy: 1 case traced, no symptoms 4 years 7 months after operation.

An analysis of the various diseases of the stomach and duodenum for which operations were performed gives a good idea of the beneficial results obtained. The results presented at this time and those that will be brought before the medical world in five or ten years will vary considerably on account of the great advancement that is being constantly made in the technic of the various forms of operation advocated. The patients of the future will have the benefit of the work that has been accomplished in the past, all of which will be greatly to their advantage. It will also be established, probably, that a certain operative procedure is more fitted to the cure of one disease than to another, that each disease will be treated as an entity, with a special form of operation, whether it be a pyloroplasty, a posterior gastrojejunostomy, an excision, a pylorectomy, a partial gastrectomy, or what not.

The cases traced were diagnosed as follows: Ulcer of the stomach, 37 cases, of whom 23 were cured, 6 improved, 4 unimproved and 4 died, or 62.1 per cent. cures. Ulcer of the duodenum, 12 cases, of which 2 had perforation. Of these 12 cases 11 were cured and 1 improved, or 91.6 per cent. cures. Stenosis of pylorus, 8 cases, of which 5 were cured, or 63.5 per cent. cures. Gastrectasis, 6 cases, of which 4 were cured, or 66.6 per cent. of cures. Vicious circle and peripyloric adhesions, 1 case each, of which number neither was cured, although both were greatly improved. Neoplasm of the pylorus, 1 case, cured. Total, 66 cases traced, of which number 44, or 66.6 per cent., were cured.

The list of diseases, the operation performed, and the end-results are as follows:

Ulcer of stomach, posterior gastrojejunostomy, long loop, suture: 4 cases traced, of whom 3 had no symptoms 4 years 4 months, 1 year 4 months (when he was killed in a

mine), and 1 year 9 months, respectively. The fourth case died about 4 years after operation, cause of death not known.

Ulcer of stomach, posterior gastrojejunostomy, primary enteroenterostomy, Murphy button: 10 cases traced, of whom 6 had no stomach symptoms 4 years 4 months, 3 years 2 months (died: nephritis), 2 years 11 months, 2 years (moved to Ireland), 2 years 4 months, respectively. One case was improved 2 years 10 months after operation. One case was unimproved, 2 years 8 months after operation. Two cases died 2 months after operation, there having been no improvement in symptoms.

Ulcer of stomach, posterior gastrojejunostomy, long loop, suture, secondary enteroenterostomy, Murphy button: 1 case traced, no symptoms 4 years 6 months after operation.

Ulcer of stomach, posterior gastrojejunostomy, no loop, suture: 15 cases traced, of whom 8 had no symptoms 2 years 2 months, 2 years, 2 years, 1 year 9 months, 1 year 8 months, 1 year 5 months, 1 year 4 months, respectively, after operation. Three cases were improved, 2 years, 1 year 5 months, 1 year 2 months; 3 were unimproved, 2 years 2 months, 1 year 6 months, 1 year 3 months, and one case died (cause of death unknown) 1 year, respectively, after operation.

Ulcer of stomach, pylorectomy, posterior gastrojejunostomy, long loop, suture: 1 case traced, no symptoms 4 years 8 months after operation.

Ulcer of stomach, posterior gastrojejunostomy, long loop, suture, enteroenterostomy, Murphy button with secondary ligation of pylorus: 1 case traced, no symptoms 2 years 2 months after operation.

Ulcer of stomach, posterior gastrojejunostomy, secondary gastroduodenostomy with enteroenterostomy, Murphy button: 1 case traced, greatly improved 1 year 6 months after operation.

Ulcer of stomach with hour-glass contraction, 2 cases traced. In both cases a gastrogastrostomy with posterior gastrojejunostomy, no loop, was performed. Both cases were markedly improved, one 2 years 3 months, and the other 10 months after operation.

Ulcer of stomach, perforated, gastrorrhaphy, posterior gastrojejunostomy, long loop, suture, primary enteroenterostomy, Murphy button: 1 case traced, no symptoms 3 years 3 months after operation.

Ulcer of stomach, posterior gastrojejunostomy, no loop, clamps: 1 case traced, no symptoms 1 year after operation.

Ulcer of duodenum, posterior gastrojejunostomy, long loop, suture: 2 cases traced, both well 5 years 7 months, and 2 years 1 month, respectively, after operation.

Ulcer of duodenum, posterior gastrojejunostomy, no loop, suture: 5 cases traced, of which number 4 had no symptoms, 2 years 7 months, 1 year 11 months, 1 year 7 months, 1 year 1 month, respectively, after operation. One case was improved 1 year 3 months after operation.

Ulcer of duodenum, posterior gastrojejunostomy, no loop, clamps: 3 cases traced, no symptoms 11 months, 10 months, and 6 months, respectively, after operation.

Ulcer of duodenum, perforated, duodenorrhaphy, posterior gastrojejunostomy, long loop, suture, primary enteroenterostomy, Murphy button: 1 case traced, well 3 years 7 months after operation.

Ulcer of duodenum, perforated, duodenorrhaphy, posterior gastrojejunostomy, no loop, clamps: 1 case traced, no symptoms 9 months after operation.

Stenosis of pylorus, pyloroplasty: 1 case traced, no symptoms 4 years 7 months after operation.

Stenosis of pylorus, posterior gastrojejunostomy, long loop, suture, enteroenterostomy: 2 cases traced, 1 having no symptoms 4 years 5 months, the other being unimproved 3 years after operation.

Stenosis of pylorus, posterior gastrojejunostomy, no loop, suture: 2 cases traced, both having no symptoms 2 years 4 months, and 1 year 7 months, respectively, after operation.

Stenosis of pylorus, posterior gastrojejunostomy, long loop, suture, secondary entero-enterostomy, Murphy button: 1 case traced, died 2 years 2 months after operation, cause of death unknown.

Stenosis of pylorus, pylorectomy, posterior gastrojejunostomy, long loop, suture, primary enteroenterostomy, Murphy button: 1 case traced, died 5 months after operation from nephritis, anasarca. All stomach symptoms had disappeared.

Stenosis of pylorus, partial gastrectomy, posterior gastrojejunostomy, no loop, clamps: 1 case traced, no symptoms 8 months after operation.

Gastrectasis with ptosis, posterior gastrojejunostomy, long loop, suture: 1 case traced, no symptoms 5 years 5 months after operation.

Gastrectasis, posterior gastrojejunostomy, secondary enteroenterostomy, Murphy button: 1 case traced, died 1 year after operation from intestinal obstruction due to bands.

Gastrectasis, posterior gastrojejunostomy, no loop, suture: 2 cases traced, no symptoms 1 year 7 months, and 1 year 2 months, after operation.

Gastrectasis, posterior gastrojejunostomy, no loop, clamps: 2 cases traced, 1 having no symptoms 11 months after operation; the other having died 7 months after operation, no improvement in symptoms.

Vicious circle, enteroenterostomy, ligation of pylorus: 1 case traced, improved 2 years 3 months after operation.

Peripyloric adhesions, posterior gastrojejunostomy, no loop, suture: 1 case traced, improved 1 year 7 months after operation.

Neoplasm of pylorus, anterior gastrojejunostomy, suture: 1 case traced, no symptoms 5 years 11 months after operation.

From the foregoing analyses, I would draw the following conclusions, these naturally being influenced by the immediate dangers from the various forms of operation.

1. The operation of choice should always be performed when feasible; when not feasible, the operation of necessity should be performed.

2. All cases of stenosis of the pylorus, whether due to a neoplasm, cicatricial contraction, hyperplasia, pylorospasm, or what not, should be treated by operative interference, preferably by posterior gastrojejunostomy.

TABULATED STATEMENT SHOWING END-RESULTS FOLLOWING OPERATIONS FOR BENIGN DISEASES OF THE STOMACH AND DUODENUM

Date	Case No.	Diagnosis	Operation	End-Results
1902	478	Pyloric neoplasm, general adhesions	Ant. gastrojejunostomy, suture	Well, 5 yrs. 11 mos.
1902	1405	Ulcer duod., stenosis pylorus	Post. gastrojejunostomy, long loop, suture	Well, 5 yrs. 7 mo.
1902	1953	Ulcer stom. stenosis pylorus. Adhesions	Post. gastrojejunostomy, long loop, suture	Died, 4 yrs. cause?
1902	2257	Gastrectasis	Post. gastrojejunostomy, long loop, suture	Well, 5 yrs. 5 mos.
1903	1291	Stenosis pylorus. Cholecystitis	Pyloroplasty. Cholecystostomy	Well, 4 yrs. 7 mos.
1903	1385	Ulcer stom., stenosis pylorus	Pylorectomy, post. gastrojejunostomy, long loop, suture.	Well, 4 yrs. 8 mos.
1903	1482	Stenosis pylorus	Post. gastrojejunostomy, long loop, suture, secondary enteroenterostomy, Murphy button.	Died, 2 yrs. 2 mo.?
1903	1604	Ulcer stom. stenosis of pylorus	Post. gastrojejunostomy, long loop, suture, secondary enteroenterostomy, Murphy button.	Well, 4 yrs. 6 mos.
1903	1750	Stenosis of pylorus	Post. gastrojejunostomy, long loop, suture, enteroenterostomy, Murphy button.	Well, 4 yrs. 5 mos.
1903	2166	Ulcer stomach, cicatrix pylorus	Post. gastrojejunostomy, long loop, suture, enteroenterostomy, Murphy button.	Well, 4 yrs. 4 mos.
1903	2245	Ulcer stom., pyloric adhesions	Post. gastrojejunostomy, long loop, suture	Well, 4 yrs. 4 mos.
1904	881	Gastrectasis, gastroptosis	Post. gastrojejunostomy, long loop, suture, secondary enteroenterostomy, Murphy button.	Died, 1 yr. Intest. Obs.
1904	1359	Ulcer duodenum, perforated	Duodenorrhaphy, post. gastrojejunostomy, long loop, suture; 2nd enteroenterostomy, Murphy button.	Well 3 yrs. 7 mos.
1904	1705	Ulcer stom., stenosis pylorus	Post. gastrojejunostomy, long loop, suture, enteroenterostomy, Murphy button.	Well, 3 yrs. 4 mos.

1904	2023	Ulcer stom., perforated	Gastrorrhaphy, post. gastrojejunostomy. long loop, entero-enterostomy. Murphy button.	Well. 3 yrs. 3 mos.
1904	3080	Ulcer stom., stenosis pylorus	Post. gastrojejunostomy, long loop, suture, entero-enterostomy, Murphy button.	Died, 2 mos. exhaust.
1904	4010	Ulcer of stomach	Post. gastrojejunostomy, long loop, suture, entero-enterostomy, Murphy button.	Died, 3 yrs. 2 mos. Nephritis.
1905	137	Stenosis of pylorus due to mass	Post. gastrojejunostomy. long loop, suture, entero-enterostomy, Murphy button.	No imp. 3 yrs.
1905	293	Ulcer stom.. cicatrix pylorus	Post. gastrojejunostomy, long loop, suture, entero-enterostomy, Murphy button.	Well, 2 yrs. 11 mos.
1905	560	Ulcer stom., stenosis pylorus	Post. gastrojejunostomy, long loop, suture, entero-enterostomy, Murphy button.	Died, 2 mos. exhaus.
1905	613	Ulcer stom., stenosis pylorus	Post. gastrojejunostomy, long loop, suture, entero-enterostomy, Murphy button.	Imp. 2 yrs. 11 mos.
1905	747	Stenosis pylorus	Pylorectomy, post. gastrojejunostomy, long loop, suture, enteroenterostomy, Murphy button.	Died, 5 mos. anasarca.
1905	1054	Ulcer of stomach	Post. gastrojejunostomy, long loop, suture, entero-enterostomy, Murphy button.	No imp. 2 yrs. 8 mos.
1905	1163	Ulcer stom., stenosis pylorus	Post. gastrojejunostomy, long loop, suture, entero-enterostomy, Murphy button.	Well, 2 yrs. moved to Ireland.
1905	1381	Ulcer duodenum, induration	Post. gastrojejunostomy, no loop, suture	Well, 2 yrs. 7 mos.
1905	1494	Ulcer stom., stenosis pylorus, adhesions to liver	Post. gastrojejunostomy, long loop, suture, entero-enterostomy, Murphy button; secondary ligation of pylorus.	Well, 2 yrs. 2 mos.
1905	1927	Stenosis of pylorus	Post. gastrojejunostomy, no loop, suture	Well, 2 yrs. 4 mos.
1905	1986	Ulcer stom. stenosis pylorus	Post. gastrojejunostomy, long loop, suture, entero-enterostomy, Murphy button.	Well, 2 yrs. 4 mos.
1905	2196	Ulcer stomach	Post. gastrojejunostomy, long loop, suture	Well, 1 yr. 4 mos., killed in mine.[1]

TABULATED STATEMENT SHOWING END-RESULTS FOLLOWING OPERATIONS FOR BENIGN DISEASES OF THE STOMACH AND DUODENUM—*Continued*

Date	Case No.	Diagnosis	Operation	End-Results
1905	2289	Ulcer stomach, stenosis pylorus	Post. gastrojejunostomy, no loop, suture	Well, 2 yrs. 2 mos.
1905	2491	Ulcer stom., stenosis pylorus	Post. gastrojejunostomy, no loop, suture	No imp, 2 yrs. 2 mos.
1905	2595	Ulcer stom., hour-glass contraction	Gastrogastrorrhaphy, post. gastrojejunostomy, no loop, suture.	Imp. 2 yrs. 2 mos.
1905	2610	"Vicious circle" pylorus occluded by old cicatrix	Enteroenterostomy, Murphy button. Ligation pylorus	Imp. 2 yrs. 3 mos.
1905	2621	Ulcer duod., stenosis pylorus	Post. gastrojejunostomy, no loop, suture	Well, 2 yrs. 1 mo.
1905	2697	Ulcer of stomach	Post. gastrojejunostromy, long loop, suture. Secondary gastrodnodenostomy, enteroenterostomy, Murphy button.	Imp. 1 yr. 6 mos.
1905	2726	Ulcer stom., cicatrix pylorus	Post. gastrojejunostomy, no loop, suture	Died, 1 yr. Cause?
1906	178	Erosion of Dieulafoy	Post. gastrojejunostomy, no loop, suture	Well, 2 yrs.
1906	204	Erosion of Dieulafoy	Post. gastrojejunostomy, no loop, suture	Imp. 2 yrs.
1906	280	Ulcer of stom., stenosis of pylorus	Post. gastrojejunostomy, no loop, suture	Well, 2 yrs.
1906	437	Ulcer duodenum, stenosis pylorus	Post. gastrojejunostomy, no loop, suture	Well, 1 yr. 11 mos.
1906	939	Ulcer of stom., cicatrix of pylorus	Post. gastrojejunostomy, no loop, suture	Well, 1 yr. 9 mos.
1906	1234	Ulcer of stomach	Post. gastrojejunostomy, long loop, suture	Well, 1 yr. 9 mos.
1906	1319	Ulcer stom., cicatrix duodenum, adhesions stomach and liver.	Post. gastrojejunostomy, no loop, suture	Well, 1 yr. 8 mos.
1906	1407	Gastrectasis	Post. gastrojejunostomy, no loop, suture	Well, 1 yr. 8 mos.
1906	1408	Ulcer stom., stenosis pylorus	Post. gastrojejunostomy, no loop, suture	Well, 1 yr. 8 mos.
1906	1413	Ulcer of duodenum	Post. gastrojejunostomy, no loop, suture	Well, 1 yr. 7 mos.
1906	1427	Stenosis of pylorus	Post. gastrojejunostomy, no loop, suture	Well, 1 yr. 7 mos.

1906	1462	Obstruction of pylorus by adhesions	Post. gastrojejunostomy, no loop, suture	Imp. 1 yr. 7 mos.
1906	1609	Ulcer stom., with gastrectasis	Post. gastrojejunostomy, no loop, suture	No imp. 1 yr. 6 mos.
1906	1942	Erosion of Dieulafoy	Post. gastrojejunostomy, no loop, suture	Imp. 1 yr. 5 mos.
1906	2035	Ulcer stom., gastrectasis with ptosis	Post. gastrojejunostomy, no loop, suture	Well, 1 yr. 5 mos.
1906	2226	Ulcer of stomach	Post. gastrojejunostomy, no loop, suture	Well, 1 yr. 4 mos.
1906	2288	Ulcer of duodenum	Post. gastrojejunostomy, no loop, suture	Imp. 1 yr. 3 mos.
1906	2545	Gastrectasis	Post. gastrojejunostomy, no loop, suture	Well, 1 yr. 2 mos.
1906	2611	Erosion of Dieulafoy	Post. gastrojejunostomy, no loop, suture	No imp. 1 yr. 2 mos.
1906	2726	Ulcer stom., with stenosis pylorus	Post. gastrojejunostomy, no loop, suture	Imp. 1 yr. 2 mos.
1906	2976	Ulcer duodenum adhesions	Post. gastrojejunostomy, no loop, suture	Well, 1 yr. 1 mo.
1907	180	Ulcer stomach	Post. gastrojejunostomy, no loop, clamps	Well, 1 yr.
1907	329	Ulcer of duodenuin, cicatricial contraction	Post. gastrojejunostomy, no loop, clamps	Well, 11 mos.
1907	570	Gastrectasis	Post. gastrojejunostomy. no loop, clamps	Well, 11 mos.
1907	805	Ulcer stomach, hour-glass contraction	Gastrogastrostomy, post. gastrojejunostomy, no loop, clamps.	Well, 10 mos.
1907	921	Ulcer of duodenum	Post. gastrojejunostomy, no loop, clamps	Well, 10 mos.
1907	1060	Ulcer of duodenum, perforated	Duodenorrhaphy, post. gastrojejunostomy, no loop, clamps.	Well. 9 mos.
1907	1236	Stenosis pylorus, adhesions to liver	Partial gastrectomy, post. gastrojejunostomy, no loop. clamps.	Well, 8 mos.
1907	1606	Gastrectasis	Post. gastrojejunostomy, no loop, clamps	Died, 7 mos. No imp.
1907	1737	Ulcer of duodenum	Post. gastrojejunostomy, no loop, clamps	Well, 6 mos.

3. All cases of ulcer of the stomach which do not respond to medical treatment promptly, and the various sequelæ of this disease, should be treated by operation.

4. All cases of ulcer of the duodenum, which do not respond promptly to medical treatment, should be treated by operation.

5. My preference in performing gastroenterostomy is by the posterior gastrojejunostomy, no loop, clamp route.

A list of the cases traced, in more or less detail, follows:

ABSTRACTS OF CASE HISTORIES.

I. Patient 478, 1902.—Transferred from medical to surgical wards with history of long-standing stomach trouble due to pyloric obstruction. Oper. 3-10-'02.—Ether anæsthesia. Stomach slightly enlarged. Mass size of lemon occupying seat of pylorus. Adhesions of long standing prevented posterior gastrojejunostomy. Anterior gastrojejunostomy performed, with sutures. Recovery. February 5, 1908.—No symptoms. Is in very good health. Gained 36 pounds.

II. Patient 1405, 1902.—Female aged 38. For 15 years had had indigestion, pains in epigastric region, nausea. No mass palpable. Oper. 7-27-'02.—Ulcer of duodenum with cicatricial stenosis of pylorus. Posterior gastrojejunostomy, long loop, suture. February 9, 1908.—No symptoms except constipation. In good health. Has gained in weight.

III. Patient 1953, 1902.—Female aged 27. For six months had pain after eating, with vomiting half hour after meals. Pains marked in epigastrium. Eructations of gas. No blood in vomitus. Oper. 10-11-'02.—Ether anæsthesia. Ulcer of stomach, with adhesions between stomach and liver; pylorus thickened and indurated. Posterior gastrojejunostomy, long loop, suture. Patient died four years after operation, cause of death unknown.

IV. Patient 2257, 1902.—Male aged 29. Very irregular in regard to meals. For six years has had epigastric pains, generally worse at night, oftentimes when asleep. Would awaken to find stomach greatly distended and painful. Eructations of gas gave relief. For last six weeks has had vomiting attacks, vomitus consisting of partly digested food. No blood. Lost 20 pounds in six weeks. Oper. 11-19-'02.—Lesser curvature of stomach

on level with umbilicus, greater curvature 5 inches below. Posterior gastrojejunostomy, long loop, suture. February 4, 1908.—No symptoms. In good health. Has gained 66 pounds.

V. Patient 1291, 1903.—Male, aged 45. For 8 years had suffered from stomach trouble with marked constipation. Tenderness last year over gall-bladder region. Oper. 6–11–'03.—Chronic cholecystitis. Pylorus thickened and contracted. No scars discernible. Cholecystostomy. Pyloroplasty. January 27, 1908.—Slight soreness over gall-bladder. No stomach symptoms. Health good. Has gained in weight.

VI. Patient 1385, 1903.—Female, aged 48. Subject to stomach and liver troubles for last 10 years. Attacks would recur at intervals of about 10 months, lasting 2 to 3 weeks. Ten months ago had severe attack with coffee-ground vomitus, which was very acid. Abdomen distended, some tenderness in epigastric region. Oper. 6–24–'03.—Ulcer of stomach with stenosis of pylorus. Pylorectomy, posterior gastrojejunostomy, long loop, suture. Pathological diagnosis.—Hyperplasia of submucous and muscular coats, extensive round-celled infiltration. February 3, 1908.—No symptoms. In fine health. Has gained normal weight.

VII. Patient 1482, 1903.—Female, aged 24. For three years had fulness and distress after eating. For two years became nauseated after eating, with vomiting. No blood in vomitus nor stools. Steady dull pain, burning in character just above umbilicus. Not relieved by eating. Oper. 7–23–'03.—Numerous adhesions around neck of gall-bladder and duodenum. Stomach slightly enlarged, in rather low position, pyloric opening thickened and lumen narrowed. Posterior gastrojejunostomy, long loop, suture. Persistent vomiting after operation. Second Oper. 7–18–'03.—Anastomosis in good condition. Enteroenterostomy, Murphy button. Patient died in September, 1905, cause of death not known.

VIII. Patient 1604, 1903.—Male, aged 32. For 12 years had stomach trouble. About once yearly would have attacks of pain in epigastrium, with soreness and vomiting. Pain relieved by taking food. Attacks lasted 3 to 4 weeks. Ten days had severe attack, pains in epigastrium and over gall-bladder, referred to shoulders. Vomiting, but no blood in vomitus at any time. Oper. 7–23–'03.—Stomach increased in size, greater curvature

about 2 inches below umbilicus. Adhesions of pyloric end of stomach to gall-bladder. Cicatrix of ulcer. Posterior gastrojejunostomy, long loop, suture. Persistent vomiting after operation. Second Oper. 8–3–'03.—Anastomosis in good condition. Enteroenterostomy, Murphy button. January 28, 1908.—No symptoms. In good health. Gained 34 pounds.

IX. Patient 1750, 1903.—Male, aged 41. Had enteric fever 18 years ago, followed by "stomach trouble," which has persisted. Last two years could not eat much solid food. Last three months has lost 20 pounds. Oper. 8–15–'03.—Stenosis of pylorus. Posterior gastrojejunostomy, long loop, suture; enteroenterostomy, Murphy button. January 27, 1908.—No symptoms. In good health. Has gained 44 pounds.

X. Patient 2166, 1903.—Female, aged 47. "Indigestion" last 20 years. Pneumonia 10 years ago; enteric fever 9 years ago. Two years ago had sudden attack of dull pain in epigastrium which increased in severity and extended over entire abdomen. Pains relieved by vomiting, the vomitus being at times blood streaked. Stools very dark during attacks of pain. Oper. 10–14–'03.—Ulcer of stomach with cicatricial mass near pylorus. Posterior gastrojejunostomy, long loop, suture; enteroenterostomy, Murphy button. February 11, 1908.—No stomach symptoms. In good health, except is rheumatic.

XI. Patient 2245, 1903.—Had "indigestion" at irregular intervals for 15 years. Fifteen months ago had sharp epigastric pains which radiated to back. Has had but one attack of hematemesis. Nausea and vomiting of undigested food about half hour after meals. Oper. 10–24–'03.—Stomach dilated, extending below umbilicus; cicatrix from ulcer, with adhesions, near pylorus. Posterior gastrojejunostomy, long loop, suture. February 3, 1908.—No symptoms. "Not better in years." Has gained 35 pounds.

XII. Patient 881, 1904.—Female, aged 46. Erysipelas of face recurring from age of 8 once or twice yearly for years. Had three large pulmonary hemorrhages at short intervals, 20 years ago. Had "indigestion" last 13 years. Eructations, hiccoughs, gastric distress with pain after eating. No vomiting. Has been on milk diet for weeks at a time. Oper. 5–14–'04.—General lengthening of the mesentery of the bowel, with ptosis of stomach and intestine. Stomach was very much dilated. Posterior gas-

trojejunostomy, long loop, suture. Persistent vomiting after operation. Second operation 5–31–'04.—Anastomosis in good condition. Enterocnterostomy, Murphy button. Re-admitted to German Hospital 5–21–'05 in a very weak condition, abdomen markedly distended, constant vomiting. Condition had lasted three days. Oper. 5–21–'05.—Omentum adherent to parietal peritoneum. Obstruction of bowel by bands, with volvulus of mesentery. Obstruction relieved. Patient died on the table.

XIII. Patient 1359, 1904.—Male, aged 32. For 9 years had been a sufferer from epigastric pains, nausea and constipation. Could not vomit. Day before admission had excruciating pains, worse in right hypochondrium. Oper. 7–3–'04.—Perforated ulcer of duodenum. Ulcer 3 mm. in diameter. Ulcer closed with silk Lembert suture. Posterior gastrojejunostomy, long loop, suture; enterocnterostomy, Murphy button. February 1, 1908.—No symptoms. In fine condition.

XIV. Patient 1705, 1904.—Male, aged 48. Had first attack of "stomach trouble" 19 years ago, lasting 2 weeks. Loss of appetite, vomiting, constipation, pains in epigastrium. Six years later had similar attack lasting several weeks. In last four or five years attacks have become more frequent. Pain usually relieved by phosphate of soda. Has been under treatment for years. Oper. 9–9–'04.—Ulcer of stomach with cicatricial contraction near pylorus. Posterior gastrojejunostomy, long loop, suture, enteroenterostomy, Murphy button. January 26, 1908.—No symptoms. In fine health.

XV. Patient 2023, 1904.—Had had "indigestion" for years. Admitted to hospital with history of sudden attack of pain in epigastrium, followed by sweating, collapse. Abdomen distended and tender. Oper. 10–24–'04.—Ulcer of stomach, perforated. Ulcer closed with silk Lembert suture. Posterior gastrojejunostomy, long loop, suture; enteroenterostomy, Murphy button. January 30, 1908.—Has no symptoms, no suffering, but complains of lack of strength.

XVI. Patient 2080, 1904.—Male, aged 30. Was operated upon about 2 months before admission, for mastoid disease (at another hospital). Five weeks before admission had sharp pain after eating solids, pains lasting about 10 minutes. Gradually increased in severity so that he could take nothing but liquids. Continuous nausea after eating, but no vomiting. Oper. 11–17–

'04.—Stomach walls thicker than normal near pylorus, and pyloric opening constricted. Posterior gastrojejunostomy, long loop, suture; enteroenterostomy. Patient died about 1-1-'05 there having been no improvement in his symptoms. Died from inanition and exhaustion.

XVII. Patient 4010, 1904.—Male, aged 24. Had had "indigestion" for years. Eructations of gas, marked pain after eating, nausea and vomiting. At times blood in vomitus. Oper. 11-23-'04.—Ulcer of stomach. Posterior gastrojejunostomy, long loop, suture; enterocnterostomy, Murphy button. Patient died in January, 1908, from nephritis. Had had no stomach symptoms after operation.

XVIII. Patient 137, 1905.—Male, aged 37. For 7 years had gastric distress, worse after eating, constipation, loss of weight. Vomiting at long intervals. Mass palpable to left of umbilicus. Oper. 1-21-'05.—Pylorus thickened, lumen contracted. No other lesion found in stomach or intestine. Posterior gastrojejunostomy, long loop, suture; enteroenterostomy, Murphy button. January 31, 1908.—At times has same symptoms as before operation. Under medical treatment. Health poor. No natural bowel movements.

XIX. Patient 293, 1905.—Male, aged 31. For 8 years had gastric cramps. No vomiting until 4 years ago. Constant dull, aching pain in epigastrium, worse at night. Vomiting. Oper. 2-9-'05.—Ulcer of stomach with cicatrix near pylorus. Posterior gastrojejunostomy, long loop, suture; enteroenterostomy, Murphy button. January 24, 1908.—No symptoms. In good health. Gained in weight.

XX. Patient 560, 1905.—Male, aged 24. For years had had "stomach trouble." Last 8 months had cramp-like pains in stomach, worse at night, aggravated by eating. Constant pain during last month. Oper. 3-23-'05.—Ulcer of stomach with cicatricial stenosis of pylorus. Posterior gastrojejunostomy, long loop, suture; enterocnterostomy, Murphy button. Patient died about two months after operation. Had had persistently blood stools. Death probably due to exhaustion and inanition.

XXI. Patient 618, 1905.—Male, aged 38. Indefinite history of "stomach trouble" extending over years. During last year had marked pains in stomach, worse at night. Solid food vomited 24 hours after ingestion. Oper. 3-23-'05.—Ulcer of stomach

near pylorus, with stenosis of pylorus. Posterior gastrojejunostomy, long loop, suture; entcroenterostomy, Murphy button. January 24, 1908.—Much better than before operation. Health fair. Has gained in weight.

XXII. Patient 747, 1905.—Female, aged 65. For 7 years had pains in epigastrium after eating, vomiting two or three hours after meals. No hematemesis. Oper. 4-7-'05.—Stenosis of pylorus. Pylorectomy; posterior gastrojejunostomy, long loop, suture; enteroenterostomy, Murphy button. Pathological Report.—Fibrous thickening of submucous and muscular coats. Patient died about 5 months after operation, having developed general anasarca; urine very scanty. Marked ascites.

XXIII. Patient 1054, 1905.—Female, aged 29. For 8 years had suffered from chlorosis. Had anorexia, vomiting, hematemesis, pain in stomach after eating. Oper. 5-20-'05.—Ulcer of stomach. Posterior gastrojejunostomy, long loop, suture; entcroenterostomy, Murphy button. January 28, 1908.—Attacks similar to those before operation persisted. Went to Scotland and entered Victoria Infirmary, Glasgow. Exploratory operation performed, everything found all right. Abdomen closed. Never free from suffering. Health same as before operation.

XXIV. Patient 1163, 1905.—Female, aged 24. For 4 years had gastric pains with vomiting 2 hours after meals. Pain, burning in character. Oper. 6-10-'05.—Ulcer of stomach with cicatrix near pylorus. Posterior gastrojejunostomy, long loop, suture; enterenterostomy, Murphy button. Patient moved to Ireland in June, 1907, in fine health.

XXV. Patient 1381, 1905.—Male, aged 35. For 5 weeks had dull epigastric pains, about 2 hours after meals. No vomiting. Constipated. Lost 30 pounds. Oper. 6-29-'05.—Ulcer of duodenum, with induration. Posterior gastrojejunostomy, short loop, suture. January 24, 1908.—No symptoms. In splendid health. Gained 20 pounds.

XXVI. Patient 1494, 1905.—Male, aged 31. For 2 years had abdominal pains, vomiting after eating with relief. Malena. Oper. 7-14-'05.—Ulcer of stomach, stenosis of pylorus with adhesions to liver. Posterior gastrojejunostomy, long loop, suture; enteroenterostomy, Murphy button. Pains continued after operation, persistent vomiting. Second Oper. 11-2-'05.—Anastomoses in good condition. Adhesions between pylorus and ab-

dominal wall. Pylorus ligated with silk. February 11, 1908.—No symptoms. In splendid health. Gained in weight.

XXVII. Patient 1927, 1905.—Female, aged 28. Nine years ago had operation for appendicitis with secondary abscesses. Last two years has had "stomach trouble," great pain in epigastrium with vomiting. Oper. 9–17–'05.—Circular thickening of pylorus. No scars. Posterior gastrojejunostomy, no loop, suture. January 30, 1908.—No symptoms. Free from all suffering one year after operation. Has gained in weight.

XXVIII. Patient 1986, 1905.—Female, aged 30. For 10 years has had dull, boring pains in epigastrium, vomiting. Hematemesis. Oper. 9–14–'05.—Ulcer of stomach with stenosis of pylorus. Posterior gastrojejunostomy, long loop, suture; enterocnterostomy, Murphy button. January 29, 1908.—No symptoms. Health very good.

XXIX. Patient 2196, 1905.—Male, aged 23. Oper. 10–12–'05.—Ulcer of stomach. Posterior gastrojejunostomy, long loop, suture. Patient was in good health, with no stomach symptoms November 11, 1906, when he was hurt while following his occupation of miner, from which injuries he died three days later.

XXX. Patient 2467, 1905.—Male, aged 53. Had "stomach trouble" for 30 years. Had ulcer of stomach, for which a pyloroplasty had been performed in another hospital 5 years ago. Was well until 1 year ago, when he had epigastric pains, with vomiting after meals, pains worse at night. Oper. 11–11–'05.—Pylorus markedly indurated. Posterior gastrojejunostomy, no loop, suture. January 23, 1908.—No symptoms. Health "could not be better." Gained 20 pounds.

XXXI. Patient 2491, 1905.—Male, aged 20. For 2 years had had epigastric pains, dull and heavy, after eating. Eructations of gas, nausea but no vomiting. Constipated. Oper. 11–18–'05.—Ulcer of stomach with stenosis of pylorus. Posterior gastrojejunostomy, no loop, suture. January 29, 1908.—About same as before operation. Has distress and pain after eating. "Sour stomach," and constipation.

XXXII. Patient 2595, 1905.—Female, aged 24. For 3 years had epigastric pains after eating. Nausea but no vomiting. Oper. 11–28–'05.—Ulcer of stomach with hour-glass contraction. Stomach incised longitudinally and sutured transversely. Posterior gastrojejunostomy, no loop, suture. February 18, 1908.—

Symptoms improved. During pregnancy had no symptoms, and was perfectly well. Since child-birth, symptoms have returned but is better than before operation.

XXXIII. Patient 2610, 1905.—Had been operated upon in 1900, at another hospital, for ulcer, posterior gastrojejunostomy, Murphy button, having been performed. For 1 year was in good health; gained 35 pounds. Symptoms returned, vomiting, with pain in epigastrium. Oper. 11–29–'05.—Gastrojejunostomy opening patulous but small. Pylorus occluded by old scar, partially. Enterocnterostomy, Murphy button. Ligation of pylorus, silk. February 11, 1908.—Better than before operation, but has attacks of vomiting, the vomitus being bitter and very sour. Has gained in weight.

XXXIV. Patient 2621, 1905.—Male, aged 44. As far back as patient can remember he has had dull pain localized at point midway between ensiform and umbilicus. Pain relieved by eating, returns about 2 hours after meals. No hematemesis. Has noticed blood streaks in stools. Lavage of stomach during past year. Slight relief. Oper. 12–2–'05.—Ulcer of duodenum with thickening and constriction of pylorus. Posterior gastrojejunostomy, no loop, suture. January 23, 1908.—No symptoms. In very good health.

XXXV. Patient 2683, 1905.—Female, aged 29. Oper. 12–11–'05.—Ulcer of stomach. Posterior gastrojejunostomy, long loop, suture. Readmitted to hospital 4–6–'06, vomiting more or less constant since last operation. Second Operation 5–19–'06.—Anastomosis in good condition. Pylorus occluded. Gastroduodenostomy, suture; enteroenterostomy, Murphy button. January 27, 1908.—Some improvement. Health not good. Sick from time to time.

XXXVI. Patient 2726, 1905.—Male, aged 28. For 6 years had "indigestion," epigastric pains, irregular vomiting. Loss of weight and strength. Oper. 12–16–'05.—Ulcer of stomach with cicatrix near pylorus. Posterior gastrojejunostomy, no loop, suture. Patient died 12–14–'06, cause of death not known.

XXXVII. Patient 178, 1906.—Male, aged 41. No serious illness in adult life except pain over gall-bladder. Had exploratory cholecystotomy performed (in a southern city), no calculi found. Wound closed without drainage of gall-bladder. Had continued pain along right costal margin, dull and steady, at

times referred to back. Never vomits, but is nauseated. Oper. 1–11–'06.—Stomach enlarged, marked adhesions between pylorus and liver. On incision into stomach, mucous membrane found hemorrhagic. Posteric gastrojejunostomy, no loop, suture. January 10, 1908.—No symptoms. "Never in better health in my life."

XXXVIII. Patient 204, 1906.—Male, aged 34. Two months before admission had violent attack of diarrhœa, lasting 4 days, followed by constipation which has persisted. Vomits at irregular intervals. Oper. 1–31–'06.—Mucous membrane of stomach very hemorrhagic. Slight adhesions between pylorus and liver. Posterior gastrojejunostomy, no loop, suture. January 8, 1908.—Better than before operation, but not well. Gained in weight.

XXXIX. Patient 280, 1906.—Female, aged 57. Not well during last 8 months. About 4 weeks before admission had sudden attack of pain in epigastrium with vomiting. Has been unable to eat solid food since that time. Vomiting begins about 1 hour after meals. Oper. 2–3–'06.—Stomach dilated, ptosed, veins distended over greater part of surface. Pylorus opaque, thickened and nodular. Mucous membrane of stomach markedly hemorrhagic. Posterior gastrojejunostomy, no loop, suture. February 8, 1908.—Patient in good health. No symptoms.

XL. Patient 437, 1906.—Male, aged 41. For 24 years had had "indigestion," accompanied irregularly with epigastric pains and vomiting. Oper. 2–21–'06.—Ulcer of duodenum with cicatrix. Posterior gastrojejunostomy, no loop, suture. January 15, 1908.—No symptoms since operation. Health very good. Gained 30 pounds.

XLI. Patient 939, 1906.—Female, aged 18. For 4 years had discomfort in epigastrium, distress after eating, with vomiting. No hematemesis. Tenderness over stomach. Oper. 4–21–'06.—Ulcer of stomach with cicatrix near pylorus. Posterior gastrojejunostomy, no loop, suture. January 20, 1908.—No symptoms. "General health very good." Gained in weight.

XLII. Patient 1234, 1906.—Male, aged 48. Enteric fever at 15; malaria at 38. For past 3 years had "stomach trouble," fulness of stomach with eructations. Pains in epigastrium with vomiting. Lost 27 pounds. Oper. 5–23–'06.—Ulcer of stomach. Posterior gastrojejunostomy, long loop, suture. February 21,

1908.—No symptoms. In very good health. Has gained 15 pounds.

XLIII. Patient 1309, 1906.—Male, aged 36. For 2 years had epigastric pains, made worse by eating. Nausea and vomiting. No hematemesis. Oper. 6–2–'06.—Ulcer of stomach, cicatricial contraction of pylorus, adhesions between stomach and liver. Posterior gastrojejunostomy, no loop, suture. February 21, 1908.—No symptoms. In good health. Gain in weight.

XLIV. Patient 1408, 1906.—Male, aged 40. For 3 years abdominal and epigastric pains, cramp-like, not affected by eating. Pain followed by vomiting. Oper. 6–13–'06.—Ulcer of stomach with induration near pylorus. Posterior gastrojejunostomy, no loop, suture. February 22, 1908.—No symptoms. Gain in weight.

XLV. Patient 1407, 1906.—Female, aged 38. For 2 months had headaches, epigastric pains, nausea, vomiting. Distress in epigastrium immediately after eating. Vomitus at times blood tinged. Some pain in stomach most of the time. Oper. 6–18–'06.—Stomach very much dilated, vessels engorged, serosa congested, slight if any stenosis of pylorus. Posterior gastrojejunostomy, short loop, suture. January 9, 1908.—No symptoms. Health good. Normal weight.

XLVI. Patient 1413, 1906.—Female, aged 18. For 1 year had epigastric pains, lately becoming very sharp and severe, with vomiting. No hematemesis. Oper. 6–14–'06.—Ulcer of duodenum. Posterior gastrojejunostomy, no loop, suture. January 24, 1908.—Symptoms for which operation was performed have all disappeared, although patient is not very strong.

XLVII. Patient 1427, 1906.—Male, aged 46. Has been sick for years. Uncontrollable vomiting, no blood in vomitus. Veins of abdomen very prominent. Oper. 6–13–'06.—Stomach walls thickened, congested. Pylorus thickened, lumen narrowed. Posterior gastrojejunostomy, no loop, suture. January 15, 1908.—No symptoms. Health "unusually good." Gained in weight.

XLVIII. Patient 1462, 1906.—Female, aged 40. Operated upon 10 years ago in southern city for cholelithiasis, calculi removed, gall-bladder drained. Six years later had biliary fistula for 3 days. One year later had attack of biliary colic. Bulging of scar, laneed by physician, fecal matter and pus released.

Sinus discharging at time of admission to German Hospital. Oper. 6-23-'06.—Adhesions between cicatrix and omentum, bowel, gall-bladder and pylorus. Adhesions so dense around pylorus that function was impaired. Stomach slightly dilated. Posterior gastrojejunostomy, no loop, suture. January 26, 1908.—is better than before stomach operation, but is not well. Has had pains similar to former attacks. Vomits bile at irregular intervals.

XLIX. Patient 1609, 1906.—Female, aged 18. Exploratory coliotomy performed in 1904. Stomach found slighted dilated, pylorus patulous. No pathologieal lesions found. In February, 1905, was treated in medieal wards for "stomach trouble." Had dull, heavy pains, suffocating in character, in epigastrium, worse after eating, with nausea and feeling of extreme weakness. Had to induce vomiting, after which pains were relieved. Notice bright red blood in vomitus lately. Operation.—Stomach slightly dilated, walls congested, veins engorged. Small patch of fibrous tissue (cicatricial?) at pylorus. Omentum adherent. Incision into stomaeh revealed clot of blood. Posterior gastrojejunostomy, no loop, suture. January 7, 1908.—No relief. "Life a burden." Always miserable. Lost 20 pounds.

L. Patient 1942, 1906.—Female, aged 49. Had "inflammation of bowels" 20 years ago. Six months ago after heavy cold, noticed distress after eating. Anorexia. No vomiting but nausea. No sharp pains. Dull pain in epigastrium between meals. Losing weight rapidly. Marked tenderness and some rigidity in epigastrium. Oper. 8-29-'06.—Walls of stomaeh thickened, veins prominent, and enlarged. No pyloric obstruction, no sears. Gall-bladder and duodenum apparently normal. Ineision into stomaeh showed mueous membrane highly eongested. A quantity of fresh blood found in stomaeh. Posterior gastrojejunostomy, no loop, suture. January 9, 1908.—Mueh better than before operation. Stomach troublesome at times. Health fair. Same weight.

LI. Patient 2035, 1906.—Female, aged 36. Since childhood has had "stomach trouble," with irregular attacks of nausea, and vomiting associated with severe headaehes. For last year had pains immediately after eating, with full, bloated feeling. Vomiting has been more or less constant, beginning immediately after meals. At times is blood tinged. Has vomited

bright red blood. Pain relieved by vomiting. Oper. 8–27–'06.—Ulcer of stomach, with gastrectasis and gastroptosis. Posterior gastrojejunostomy, no loop, suture. January 11, 1908.—No symptoms. Health very good. Gained 50 pounds.

LII. Patient 2226, 1906.—Female, aged 26. For 2 years has had continued "stomach trouble," marked pains in epigastrium, with vomiting. Has lost 30 pounds. Oper. 9–26–'06.—Ulcer of stomach. Posterior gastrojejunostomy, no loop, suture. January 15, 1908.—No symptoms. In good health.

LIII. Patient 2288, 1906.—Female, aged 27. For 4 months has had constant distress in stomach, worse about 2 hours after eating. No nausea or vomiting. No comfort after eating. Lost 20 pounds in 4 months. Oper. 10–3–'06.—Ulcer of duodenum. Posterior gastrojejunostomy, no loop, suture. January 14, 1908.—Still has "stomach trouble." Health not very good, but better than before operation.

LIV. Patient 2545, 1906.—Female, aged 18. For 2 years had noticed a "swelling" of the stomach which caused no inconvenience until 8 months ago. Then had throbbing in left hypochondrium just below costal margin. Pain constant; never referred to back or shoulders. Number of dark blood clots found in stools during last year. Patient thinks "swelling" has been more marked on right side than left, although pain has been worse on left side. Oper. 11–1–'06.—Stomach bulged out of wound. Enormously distended, walls thin. No apparent cause of distention. Posterior gastrojejunostomy, no loop, suture. February 10, 1908.—No symptoms. In good health.

LV. Patient 2611, 1906.—Female, aged 32. Had enteric fever 11 years ago. Had attack similar to present one 3 months ago, lasting 3 to 4 weeks. Sharp cutting pain in epigastrium extending downward into abdomen. Nauseated, but could not vomit. Pain constant last eight weeks. Pain relieved by eating. Oper. 11–10–'08.—No external evidence of disease in stomach. Stomach incised, mucosa greatly injected, bled easily when touched. Several small areas markedly hemorrhagic. One such spot ligated. Posterior gastrojejunostomy, no loop, suture. January 28, 1908.—Symptoms same as before operation. No improvement in general condition.

LVI. Patient 2726, 1906.—For 3 years has had "stomach trouble." Pains in epigastrium, sharp and cutting in character,

not relieved by food. Generally made worse. Never vomits, but is nauseated. Oper. 11-21-'06.—Ulcer of stomach with cicatrix near pylorus. Posterior gastrojejunostomy, no loop, suture. January 16, 1908.—For 6 weeks after operation had no symptoms. Since then has had "stomach trouble," but is much better than before operation.

LVII. Patient 2976, 1906.—Male, aged 39. For 3 months had sharp, stabbing epigastric pains, beginning 2 or 3 hours after eating. Relieved by eating. Vomiting marked, especially at night. Lost 40 pounds. Oper. 12-24-'06.—Ulcer of duodenum with periduodenal adhesions. Posterior gastrojejunostomy, no loop, suture. January 7, 1908.—No symptoms. "Never so well in my life." Gained 45 pounds.

LVIII. Patient 180, 1907.—Female, aged 32. Always had "stomach trouble." Burning epigastric pains, worse after eating, relieved by vomiting. No vomiting last 3 months, but pain is severe. Oper. 1-21-'07.—Ulcer of stomach. Posterior gastrojejunostomy, no loop, clamps. January 6, 1908.—No symptoms. In good health. "A new woman." Gained 20 pounds.

LIX. Patient 329, 1907.—Female, aged 47. For 6 months had sharp epigastric pains followed by vomiting, especially in evening. Pains relieved by food, temporarily, getting worse about 2 hours after meals. Oper. 2-4-'07.—Ulcer of duodenum with contraction. Posterior gastrojejunostomy, no loop, clamps. January 23, 1908.—No symptoms. Health steadily improving. Gained 33 pounds.

LX. Patient 570, 1907.—Female, aged 14. Oper. 2-28-'07.—Stomach greatly distended. Posterior gastrojejunostomy, no loop, clamps. January 23, 1908.—Stomach greatly improved. Nerves upset. Gained 25 pounds.

LXI. Patient 805, 1907.—Female, aged 38. Ten years ago began to have epigastric pains, relieved by vomiting. Pain cutting and severe. Vomiting relieved pain. Attacks at irregular intervals during last 10 years. Oper. 3-27-'07.—Ulcer of stomach with hour-glass contraction. Gastrogastrostomy, clamps, suture. Posterior gastrojejunostomy, no loop, clamps. January 7, 1908.—No symptoms. Very fine health. About same weight.

LXII. Patient 921, 1907.—Male, aged 56. Oper. 4-8-'07.—Ulcer of duodenum, beyond pylorus. Posterior gastrojejunos-

tomy, no loop, clamps. February 1, 1908.—No symptoms. In very good health. Gained 30 pounds.

LXIII. Patient 1060, 1907.—Male, aged 51. History of duodenal ulcer of 10 years' standing. Perforated day of operation. Oper. 4-21-'07.—Ulcer of duodenum, perforated. Duodenum infiltrated and thickened. Ulcer closed with silk Lembert suture. Posterior gastrojejunostomy, no loop, clamps. January 4, 1908.—No symptoms. Fine health. Twelve pounds heavier than average weight before operation.

LXIV. Patient 1236, 1907.—Male, aged 57. For 8 months has had attacks of nausea with vomiting, vomitus containing blood. Very little pain. Lost 30 pounds. Oper. 5-9-'07.—Pylorus thickened and indurated, lumen contracted, adhesions to adjacent viscera. Partial gastrectomy; posterior gastrojejunostomy, no loop, clamps. Pathological Diagnosis.—Chronic hyperplasia of pylorus. January 6, 1908.—No symptoms. Health steadily improving. Gained 10 pounds.

LXV. Patient 1606, 1907.—Male, aged 56. Fifteen years ago had gastritis, lasting 6 months. Vomited 15 minutes after meals. No nausea or pain. Few similar attacks until 6 months ago when there was great discomfort, vomiting of undigested food, but no blood. Oper. 6-24-'07.—Gastrectasis. Posterior gastrojejunostomy, no loop, clamps. January 16, 1908.—"Died this morning." No improvement since operation.

LXVI. Patient 1737, 1907.—Male, aged 56. For 8 months had annoying but not severe pains in epigastrium. No vomiting, no nausea. Pains at times dull and aching, relieved by food. Tenderness over epigastrium. Oper. 7-8-'07.—Ulcer of duodenum, with cicatrix. Posterior gastrojejunostomy, no loop, clamps. January 3, 1908.—No symptoms. Health steadily improving. Gained 10 pounds.